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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,042	03/15/2004	Michael Andrew Fischer	050337-1250 (05CXT0064WL)	1243
24504 7590 02/27/2007 THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 100 GALLERIA PARKWAY, NW STE 1750 ATLANTA, GA 30339-5948			EXAMINER AFSHAR, KAMRAN	
			ART UNIT 2617	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/27/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/801,042

Applicant(s)

FISCHER ET AL.

Examiner *K. P.*

Kamran Afshar, 571-272-7796

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03/15/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9, 12-24 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) in view of Cimini (U.S. Pub. No. 2003/0152058 A1).

With respect to claims 1, 5, 12, 20, 27, APA discloses an apparatus / or method (or a schematic diagram of a portion of wireless local area network 100 in the prior art. Local area network 100 comprises legacy stations 101-1 through 101-K, wherein K is a positive integer, and enhanced stations 102-1 through 102-L, wherein L is a positive integer. Legacy stations 101-1 through 101-K and enhanced stations 102-1 through 102-L use shared-communications medium 103 to communicate among themselves) Shared-communications medium 103 comprises multiple shared-communications channels. One of the stations transmitting into a first channel while another station transmits into a second channel (See APA e.g. Page 1 ¶ [0003]). However, the APA does not disclose a method comprising: receiving / transmitting a first portion of a data block on a first shared-communications channel; receiving / transmitting a second portion of the data block on a second shared-communications channel; transmitting a first acknowledgment frame into the second shared-communications channel only, wherein the first acknowledgment frame indicates receipt of the first portion of the data block; and transmitting a second acknowledgment frame into the first shared-communications channel only, wherein the second acknowledgment frame indicates receipt of the second portion of the data block. In an analogous field of endeavor, Cimini discloses similar apparatus more in detail that comprising a transmitter, a receiver (See Cimini e.g. Page, 2, Lines 14-16 of ¶ [0021]) and a framing delivery through a number of different well known mechanisms (See e.g. Page 2, Lines 1-4 of ¶ [0026], Page 3, ¶ [0029]). And, receiving / transmitting

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a portion of the data block (See as defined e.g. ACK, RTS/CTS, DATA Packet, CST frame, RTS frame, etc. Page 3, ¶ [0031]) on a shared-communications channel, and acknowledgment frame indicates receipt of the portion of the data block (See As defined e.g. ACK frame of Figs. 4A-4B, Page 3, ¶ [0031]).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to provide above teaching of Cimini to APA employing a technique that uses an immediate transmission of a positive acknowledgement (ACK) by the destination station (or the receiver), upon successful reception of a packet from sender (or the transmitter), increases network performance by avoiding the collision, using adaptive coding/modulation because the RTS/CTS, which exchanges channel information before the data packet transmission begins so that accurate rate adaptation can occur as suggested (See Cimini e.g. Page 3, ¶ [0031]).

Regarding claims 2, 17, 22, it is obvious that the first acknowledgment frame also indicates receipt of the second portion of the data block, and wherein the second acknowledgment frame also indicates receipt of the first portion of the data block (See Cimini e.g. ACK frame of Figs. 4A-4B, Page 3, ¶ [0031]).

Regarding claims 3, 18, it is obvious that a first station transmits using the first shared-communications channel and the second shared-communications channel simultaneously (See APA e.g. Page 3, ¶ [0005], enhanced stations 102-1-102-L using multiple shared-communications channels simultaneously (i.e., a multi-channel modulation scheme)) and wherein a second station transmits using the first shared-communications channel only (See APA, e.g. Shared-communications medium 103 comprises multiple shared-communications channels. One of the stations transmitting into a first channel while another station transmits into a second channel, Page 1 ¶ [0003]).

Regarding claims 4, 19, it is obvious that first acknowledgment frame and the second acknowledgment frame are transmitted (See Cimini e.g. ACK frame of Figs. 4A-4B, Page 3, ¶ [0031]) at substantially the same time (See APA e.g. Page 3, ¶ [0005], enhanced stations 102-1-102-L using multiple shared-communications channels simultaneously (i.e., a multi-channel modulation scheme)).

Regarding claims 6, 21, it is obvious that a receiver (See Cimini e.g. Page, 2, Lines 14-16 of ¶ [0021]) / receiving a second acknowledgment frame on the first shared-communications channel (See

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Cimini e.g. ACK frame of Figs. 4A-4B, Page 3, ¶ [0031]), wherein the second acknowledgment frame indicates receipt of the second portion of the data block (See APA, e.g. Shared-communications medium 103 comprises multiple shared-communications channels. One of the stations transmitting into a first channel while another station transmits into a second channel, Page 1, ¶ [0003]).

Regarding claims 7, it is obvious that the first acknowledgment frame also indicates receipt of the second portion of the data block, and wherein the second acknowledgment frame also indicates receipt of the first portion of the data block (See Cimini e.g. ACK frame of Figs. 4A-4B, Page 3, ¶ [0031]).

Regarding claim 8, it is obvious that a first station transmits using the first shared-communications channel and the second shared-communications channel simultaneously (See APA e.g. Page 3, ¶ [0005], enhanced stations 102-1-102-L using multiple shared-communications channels simultaneously (i.e., a multi-channel modulation scheme) and wherein a second station transmits using the first shared-communications channel only (See APA, e.g. Shared-communications medium 103 comprises multiple shared-communications channels. One of the stations transmitting into a first channel while another station transmits into a second channel only, Page 1, ¶ [0003]).

Regarding claims 9, 24, it is obvious that a transmitter (See Cimini e.g. Page, 2, Lines 14-16 of ¶ [0021]) / transmitting the first portion of the data block and transmitting the second portion of the data block occur (i) at substantially the same time and (ii) with the same modulation (See Cimini e.g. adaptive modulation of Figs. 4A-4B, Page 3, ¶ [0031]).

Regarding claims 13, 28, it is obvious that the acknowledgment comprises at least one of (i) a first acknowledgment frame received (See Cimini e.g. ACK frame of Figs. 4A-4B, Page 3, ¶ [0031]) on the second shared-communications channel and (ii) a second acknowledgment frame received on the first shared-communications channel (See APA, e.g. Shared-communications medium 103 comprises multiple shared-communications channels. One of the stations transmitting into a first channel while another station transmits into a second channel, Page 1, ¶ [0003]).

Regarding claims 14, 29, it is obvious that the first acknowledgment frame indicates (See Cimini e.g. ACK frame of Figs. 4A-4B, Page 3, ¶ [0031]) receipt of at least one of (i) a first portion of the data block sent on the first shared-communications channel and (i) a second portion of the data block sent on

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the second shared-communications channel (See APA, e.g. Shared-communications medium 103 comprises multiple shared-communications channels. One of the stations transmitting into a first channel while another station transmits into a second channel, Page 1, ¶ [0003]).

Regarding claims 15, 30 it is obvious that transmitting the portion of the data block (See Cimini e.g. ACK frame of Figs. 4A-4B, Page 3, ¶ [0031]) occurs over the combination of the first shared-communications channel and the second shared-communications channel (See APA, e.g. Shared-communications medium 103 comprises multiple shared-communications channels. One of the stations transmitting into a first channel while another station transmits into a second channel, Page 1, ¶ [0003]).

Regarding claim 23, it is obvious that the receiver and the transmitter constitute a first station (See Cimini e.g. Page, 2, Lines 14-16 of ¶ [0021]) and wherein a second station transmits using the first shared-communications channel only (See APA, e.g. Shared-communications medium 103 comprises multiple shared-communications channels. One of the stations transmitting into a first channel while another station transmits into a second channel, Page 1, ¶ [0003]).

3. Claims 10-11 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) in view of Cimini (U.S. Pub. No. 2003/0152058 A1) further in view of Ikegami (U.S. Patent 6,393,032 B1).

Regarding claims 10, 25, APA and Cimini disclose everything as discussed above in rejected claims 5 and 20. However, both APA and Cimini are silent the transmitter is also for (i) transmitting a first control frame into the first shared-communications channel before transmitting the first portion of the data block and (ii) transmitting a second control frame into the second shared-communications channel before transmitting the second portion of the data block. In an analogous field of endeavor, Ikegami discloses that a first wireless terminal transmitting a first control frame to and receive a second control frame from the other wireless terminals for a first data transfer rate for connecting the wireless channel therebetween, and thereafter transmitting data to and receive data from the other wireless terminals (See e.g. first control frame, second control frame, Co. 10, Lines 40-45, Co. 2, Lines). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to provide above teaching of Ikegami to combined Cimini and APA providing a control frame for each wireless terminal to transmit a

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frame to and receive a frame from other wireless terminals for connecting wireless channel therebetween, and transmits data to and receives data from the other wireless terminals through the wireless channel (See Ikegami, e.g. Co. 2, Lines 41-46).

Regarding claim 11, 26, it is obvious that first control frame is one of a Request\_to\_Send frame and a Clear\_to\_Send frame (See Ikegami e.g. CTS, RTS frame, etc., Co. 3, Lines 49-53, See Cimini e.g. ACK, RTS/CTS, DATA Packet, CST frame, RTS frame, etc., Page 3, ¶ [0031]).

### Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


- |  |   |
|--|---|
| a) Tejima (U.S. 4,809,268).                  | e) Brockmann (U.S. 6,977,944 B2).           |
| b) Hakkinen (U.S. 7,069,038 B2).             | f) Xie (U.S. 7,072,309 B2).                 |
| c) Wentink (U.S. Pub. No.: 2003/0181212 A1). | g) Wentink (U.S. Pub. No.: 2004/008592 A1). |
| d) Wentink (U.S. Pub. No.: 2004/0029590 A1). |   |

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kamran Afshar whose telephone number is (571) 272-7796. The examiner can be reached on Monday-Friday.

If attempts to reach the examiner by the telephone are unsuccessful, the examiner's supervisor, Eng, George can be reached @ (571) 272-3984. The fax number for the organization where this application or proceeding is assigned is 571-273-8300 for all communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Kamran Afshar

  
GEORGE ENG  
SUPERVISORY PATENT EXAMINER